

Date:- 10/10/18-

VCD

F.Y.B.Sc. CHEMISTRY P-II SEM-I MARKS:75 TIME:2.5HRS

- NOTE: i) All the questions are compulsory.
ii) Figures to right indicate full marks.
iii) Use of non-programmable calculator / log table is allowed.

Q.1. Answer the following questions (any four)

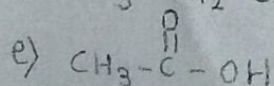
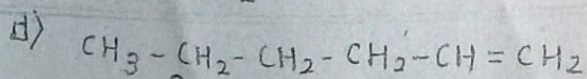
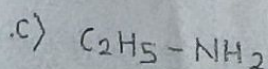
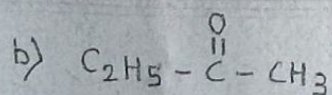
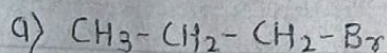
- A) Write down the classification of elements into s,p,d,f- block on the basis of electronic configuration. [20]
- B) Define Effective Nuclear charge and Screening effect.
- C) Define ionization enthalpy and factors affecting the magnitude of enthalpy of ionization.
- D) Explain covalent bond in detail.
- E) Distinguish between ionic bond and covalent bond.
- F) Write down Lewis dot structure for following molecules: a) NH_4 b) BF_3
- G) Explain Bohr's Theory.
- H) Write down geometry of following molecules: a) BCl_3 b) SF_6

Q.2. Answer the following questions (any four)

- A) Explain sp^3 -hybridisation of carbon atom in detail. [20]
- B) Define the following terms: a) inductive effect b) electromeric effect c) hyper conjugation d) resonance e) hybridisation.
- C) Distinguish between hyper conjugation and resonance.
- D) Explain inductive effect in detail.
- E) Explain sp^3 -hybridisation of oxygen atom in detail.
- F) Distinguish between inductive effect and electromeric effect.
- G) Distinguish between sigma bond and pi bond present in organic compound.
- H) Explain sp^2 -hybridisation of oxygen atom in detail with suitable example.

Q.3. Answer the following questions (any four)

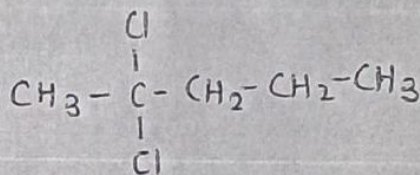
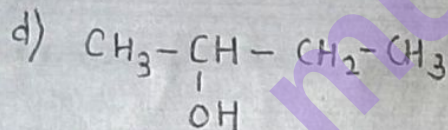
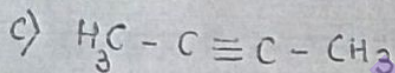
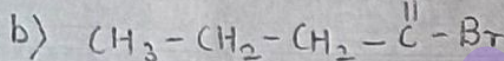
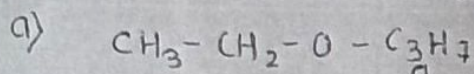
- A) Explain homolytic fission and heterolytic fission. [20]
- B) Describe the various methods of formation of free radical.
- C) What is carbocation? Explain shape and structure of carbocation.
- D) Explain shape and structure of free radical.
- E) Give IUPAC names of following compounds.



- F) Explain stability of carbocation on the basis of; a) inductive effect b) resonance
c) hyperconjugation.
G) Explain acid and base on the basis of Lowery-Bronsted concept.
H) Write down structure of following compounds.
a) 2-Chloro butane b) Ethanal c) Methanamide d) 2-pentene
d) Propanenitrile

Q.4. Answer the following questions (any three)

- A) Explain ionic bond in detail.
B) Explain sp^2 -hybridisation of carbon atom in detail with suitable example.
C) Give IUPAC names of following compounds.



- D) Write a note on Drawbacks of Rutherford's atomic model.
E) Explain sp^3 -hybridisation of nitrogen atom in detail.
F) Distinguish between electrophile and nucleophile.
